THE

HOME FRIEND;

A WEEKLY MISCELLANY OF AMUSEMENT AND INSTRUCTION.

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A VISIT TO CYPRUS.—No. III.

LIMERSOLE.

WEARILY we plodded along under the broiling heat of a midday sun. Our umbrellas were rendered entirely useless, from the circumstance of violent gusts of wind occasionally eddying up from the sea-side, and sweeping by

with such destructive force as to threaten not only utterly to annihilate these protectors from heat, but actually to unhorse us if we ventured to hold on to the bent whalebones; we had therefore no resource left us but to shut them up and brave the sun's fierce rays as best we could. The first place we passed was an aqueduct of very great extent, and which had doubtless originally served for the transport of excellent water from the neighbourhood of ancient Paphos into the low lands, where its want is so acutely felt, and where its presence would be an additional incitive to agricultural pursuits. This aqueduct has long since fallen into ruins, and been utterly neglected; but, with a very trifling expense, it could be rebuilt and rendered serviceable, and any other than the present inhabitants would long since have accomplished this feat. For four hours we rode over a pleasant plain, in a very partial state of cultivation, but abounding with wild flowers and game of several descriptions. If it had not been for the excessive heat of the day, and the great glare thrown up from the parbaked earth, we might have enjoyed our ride exceedingly. To our left, varying in distance from a mile and a half to two miles from us, according to the formation of the coast, were the cool-looking blue waters of the Mediterranean; whilst to our right a long defile of mountains presented a very variegated aspect as the shadows of fleeting clouds rested for a while on the golden-tinged leaves of the countless cypress trees, and clothed all around in brown obscurity. The tints and shades over ocean and plain were also beautiful in the extreme; and not the least pleasurable sensation in the glare of that noontide heat was to watch the dark ripple of the coming sea-breeze upon the deep-blue surface of the waters—see how it sported with the ready-spread sails of long-becalmed boats and vessels, which, regardless of the helmsman's care, were drifting slowly to-and-fro as the tide set them—and, best of all, to bare our shirt collars and bosoms to its welcome and balmy breath, as after long-protracted promises it finally swept past us, laden with all the balmy freshness and health of the distant ocean. As the sea-breeze increased, our languid frames gained fresh energies, and, setting spurs to our willing steeds, we cantered merrily over the plain, the wind whistling by us like so many rifle-shot; and by half-past 11 A.M., we arrived at the village of Mazatos, situated on an agreeable declivity at the foot of one of the lesser mountains of a continuous chain that extends from Nicosia to the south-easternmost extremity of the island. Mazatos was but a miserable village, inhabited entirely by Greek peasantry, under the supervision of a duly-appointed kekiah. The inhabitants subsist chiefly upon the produce of their vines, and rear a few silkworms, which supply a small portion of silk annually that is bartered or sold to the Italian and French shipmasters frequenting the port of Larnaca. Sessame-seed was being planted for the first time, and, as the results proved, answered their most sanguine expectations. The villagers were hospitable and civil, and the trees furnished ample shade to prove a pleasant resting-place for the brief hour that we sojourned here. Fruit was plentiful and good, and so was wine, but we could neither for love nor money procure any milk. Strange to say that, though fish must be abundant in the many inlets and small bays within twenty minutes' walk of Mazatos, and though the natives are oftentimes subjected to rigorous fasts in which, at intervals, fish is permitted as a luxurious indulgence, not one of the natives had in his possession either a fishing-line or a net: vegetables were plentiful, and every house was well stocked with poultry, which they eagerly sold to us at ridiculously cheap prices. The old kekiah

complained sadly of the heavy taxations levied by the local government, and of the inadequate means at his disposal to meet them. But though the soil was rich and inviting, and though they had almost certain prospects of handsome profits accruing, the natives listlessly preferred poverty, their pipes, and the shades of their much-loved cypress-trees, to any golden realities which entailed the necessity of a little labour and fatigue. At about an hour after midday we mounted again, and pursued our course in a S.W. direction; very soon the road diverged towards the west, and we entered upon an extensive and fertile country, to which our Greek guide gave the name of Laconicos, said to have been so called from a race of people of that name that in former ages dwelt in these parts. Here was a rich tract of country utterly desolate! the soil replete with spontaneous vegetation, wild flowers and brambles, and the base of the mountains thickly set with dark cypress-trees; but not a human being or a hut to be met with. Occasionally a frightened jackal yelled forth his astonishment at the sudden and unexpected apparition of men, and then scoured over the plain with lightning speed. We had brought our guns with us partly for protection's sake, though that appeared little needed in so perfect a wilderness, and partly because we had been truthfully informed that there was excellent shooting by the way. So long as the sun continued high above the horizon we were too much intent upon the best means of securing our aching heads from the fierce heat of his almost vertical rays. Partridges flew up on all sides; hares scampered across our pathway; wild doves and pigeons flew overhead in legions; but still the guns hung listlessly over our backs, and we urged our weary steeds onward, anxious to reach some shady spot or pleasant spring where we might rest a while in the shade, and slake a thirst which had now become almost insupportable. We presently crossed two little streams, situated about an hour's distance apart from each other, and the muddy, nauseous water that these afforded was even rejected by our thirsty animals, though they alleviated our sufferings in a great measure by enabling us to rinse out our parched-up mouths, and moisten the sun-split lips. Two hours after this, and as the sun was sinking low in the west, we sighted the banks of the famed river St. Helena, so called in honour of the mother of the emperor Constantine, who landed at the mouth of this river on her return from the pilgrimage to Jerusalem. Here we bivouacked for the night; tent we had none, neither was there any house to afford us a shelter; but our famous Cyprus *capotes* were an ample protection from the dew, and the surrounding country afforded brushwood and fuel, with which we heaped up little bonfires all around our encampment, not so much for warmth's sake as to serve as a protection against wild beasts, and that more insidious enemy the viper, with which this part of the country was reported to abound. Be this as it may, fatigue and exercise caused us to sleep as soundly as any prince pillowed on down; and the next morning the bright morning star and the early song of the lark awoke us to the gratifying sensation of having slept soundly and safely throughout the night long. Before starting for Limersole we strayed along the bankside of the river; the dew was yet heavy upon the ground, and the earth in many places so thickly overgrown with brushwood that we could with difficulty disentangle ourselves and our guns from the brambles. Vipers, doubtless, were plentiful, though we met with none, but then our heavy, thick shooting-boots set their venom at defiance. After a while we came upon the haunts of game; the small swamps near the banks swarmed with

wild waterfowl, and the thicker brushwood was well peopled with partridges, quails and hares. The result of an hour's sport told wonderfully upon our game-bags; and when we mounted and pursued our way towards Limersole, we had the satisfaction of knowing that however inhospitable or poverty-stricken the inhabitants might chance to prove, we were at least independent of them for that day's dinner. The sun rose with a highly-inflamed complexion, and only condescended to shine upon the earth for a few brief minutes, speedily enveloping himself with portentous clouds which were scudding overhead towards the north-east; the sea, too, broke heavily upon the cliffs and shingles of the coast, and the loud echo of the clamorous voice of the waves fell upon the ear ominously. There was evidently a gale brewing in some quarter, and we knew not how soon or from whence it would burst forth in fury; so we hurried along our horses to the utmost stretch of their walking capacities—galloping, cantering, or even trotting was out of the question over a road where every second stone was loose and slippery. As we advanced the day became more gloomy, and the wind freshened apace: setting aside the fear of getting a thorough soaking, there was something so exhilarating and buoyant in the cool atmosphere that we were full of mirth and spirits, and rode on with grateful hearts towards that Great Benefactor who had fixed the changes and the seasons for the comfort and happiness of his creatures. No one knows how to appreciate a gloomy day save those who have resided in hot eastern climes, where the perpetual glare and sunshine dazzles the eye and makes the brow ache, and long again for the cloudy days and showers of the monsoon, or, as in Cyprus, the winter. To us this day had especial charms. Ever and anon, as we reached an elevated point, we paused a few moments to gaze on the grand, the sublime, landscape and sea-view to the left: angrily buffeting with obstinate black rocks, white with foaming rage, high up in the air sprung the scattered surge of the surf; further on still, and the ocean was tossed with restless billows—the blue sea of yesterday was dark and sullen, variegated ever and anon by the white-crested wave which burst in contact with the wind. Far as the eye could reach in the dim horizon all was dark blackness, and it was difficult to define where the sight was bounded as regards the sea, or where the heavy black bank of clouds commenced that girt the horizon round with the lightning's bands of the coming storm. Then in the centre of this vast waste of angry waters, like frightened birds, vessels and boats were scudding before the breeze—every available sail set and spread out like wings to carry them one hour sooner, were it possible, to the wished-for haven; now rising on the crested wave, now falling in the sunken deep hollow; now rolling heavily from side to side, now darting forward with lightning-speed; then checked abruptly by the overpowering volume of some huge wave that scatters its foam high above the topmost masts, and staggering beneath the blow, like a man smitten even unto death. Brave ship! she rights again, and flies onward with a greater speed. Heaven guide her safely to the wished-for port. We look to our right, and the dark mountain tops—dark with the foliage of countless trees, look white in comparison to the heavy black sky beyond and above them, as the trees wave and bend beneath the fierce gusts that outride the gale; their white branches glitter in the air like warriors' lances, and they moan incessantly; the tall grass bends to the sighing breeze; the brambles are denuded of leaves and dried twigs, which are whipt up high into the air and so disappear in a cloud of dust; and midst the universal moaning of nature the distant voice of the thunder is heard

growling discontentedly like a bloodhound held in chains, which yearns to be set free that it may sweep unimpeded on its dreadful way. These notes are notes of warning to us, however, so we speed on again, and after about five hours' ride we reach the river *Mithante* (or Amathante), whose turbid waters are swollen, and the shadow of the storm hangs heavily upon the foliage that clusters around her banks. Crossing this river we set our horses to their utmost speed, for the road was now better, and a few heavy drops of rain that fell as big as half-crown pieces upon the earth, warned us that there was no time to be lost; and it was just four o'clock by the muezzin's call when we galloped into the village of Limersole, and descended at the aga's house, who was governor of this district. It is well that we arrived when we did, for in about half an hour afterwards a most frightful gale set in, and lasted without a moment's intermission till about two hours after midnight; but of this, more anon. Our game-bag was placed at the aga's disposal, and he forthwith sent it to the ladies of his harem, to be cooked for our evening repast. We found the governor a courteous, well-bred gentleman, a native of Stamboul; he did everything in his power to render us comfortable for the night, and we, being exhausted and hungry, did most ample justice to the good things he set before us. After dinner, coffee and pipes were introduced, and amidst the deafening roar of heaven's artillery and the fury of the wind and rain, we sat down cosily on the governor's divan and made keif. Limersole is a considerable town for Cyprus, and contained nearly three thousand inhabitants, of whom at least two thousand were Turks. Olives, mulberries, and figs were abundant, and the inhabitants had with some success introduced the sessame seed. Of course grape-vines were numerous. Silk and olive oil, however, and a small quantity of cotton, constituted the staple commodities of commerce. The women, both Turkish and Greek, went about with their faces uncovered, and conversed freely with us; and the governor's daughter, a fine strapping girl of fifteen, who at that age in other parts of Turkey would have been closely confined within the precincts of the harem, sat down by our side and entered freely into conversation in the presence of her father and other Moslem guests. The governor and his daughter were highly delighted with some paintings we showed them of those parts of the island which we had already visited, and which they instantly recognised. This intelligent man informed us, that in the vicinity of Paphos there still existed ruins of what had once been sugar-factories, an evident proof that the cane had once been cultivated to some extent on the island, and a surety of its success were it to be introduced there again. He argued that from calculations he had made of the available land in the immediate vicinity of Limersole, which from its moistness was best adapted to the growth of the sugar-cane, he could with facility plant from eighty to a hundred thousand canes, and for the matter of that, the water in the neighbourhood was so plentiful and so easily supplied, that the whole country might be advantageously laid out as *sugar land—urd el sucre*, to use his own words. His tenure was too uncertain and his means inadequate, or else he himself would have set an example well worthy of imitation. There is one great advantage, and that is, that at the proper season a few boat-loads of canes fit for planting out might be brought over from the Antioch district, in from twenty-four to thirty hours. At Limersole, as elsewhere in Cyprus, vegetables, fruit, and poultry were abundant and cheap; but it possesses a decided superiority over Larnacca with regard to climate: of this the appearance of

the natives bore ample evidence. The mild clear atmosphere is in some measure attributable to the frequent thunder-storms that clarify the atmosphere; and Cape St. Andrias may with truth be called the Cape of Thunder-storms, for barely a week passes but what you see the lightning darting its jagged prongs into the dark sides of the lofty cape. When we retired for the night the gale raged at its utmost fury, and the last thing we heard or saw as we laid our weary heads upon the welcome pillow, was the deafening crash of a peal of thunder, and a flood of light that seemed to have set the world in a blaze. Next day we awoke to the music of many sweet songsters, and the sun shone serenely over the spring aspect, whilst the gentle breath of morning seemed to murmur comfort to herb and tree, for the rough usage they had received from her violent sister the furious storm. A full-blown rose, with the dew yet hanging from its petals, forced its way through the trellis-work of the window, and seemed to blush at our indolent laziness in letting the precious hours flit by in sleep; so we jumped up, and then came a messenger with a heavy face and sad tidings—a Greek ship had been driven ashore during the night, and was become a perfect wreck. We accompanied the governor to the scene of the disaster that guards might be set to protect the wreck and the crew from plunder. It was a lovely morning: the sea, as though ashamed of his boisterous hilarity yesterday, barely threw a ripple upon the beach; whilst a few naked rocks, yet damp with spray, reflected the sun's rays in splendour. Further on was the hull of a dismasted vessel, and on the beach, carrying things to-and-fro, pipe in mouth, some mending old sails, some singing snatches of lively ditties, was the rescued crew of that very ship. Last night their hearts ached with fear and trembling, and fervently they prayed to see that sun again whose cheering rays now soothes them in their toil; and they, alas! like many others, have already forgot the Hand that stilled the tempest in the hour of need.

CURIOSITIES OF ORGANIC LIFE.—No. II.

Animals and plants are also subject to a summer sleep in the hot and dry seasons of some tropical climates. "Sometimes," so the aborigines relate, says Humboldt, "on the margin of the swamps the moistened clay is seen to blister and rise slowly in a kind of mound, then with a violent noise, like the outbreak of a small volcano, the heaped-up earth is cast high into the air. The beholder, acquainted with the meaning of this spectacle, flies, for he knows there will issue forth a gigantic watersnake or a scaly crocodile, awakened from a torpid state by the first fall of rain." Quadrupeds are seized with lassitude, birds fly into the dense forest, and not an insect is visible. At length the rain comes down, and suddenly the scene changes into one of life and animation.

The tenrec—a kind of hedgehog—of Madagascar and the Mauritius, becomes dormant, and tortoises and serpents lie torpid and motionless in the parched and hardened soil.

Those curious animals the lepidosirens, which appear to be a connecting link between the amphibia and fishes, afford another instance of æstivation. One species is a native of the Amazon, another of the Gambia. Sir W. Jardine, speaking of the latter, says: "Fish taken in the summer of 1835, on the shore of Macarthy's Island, about 350 miles up the river Gambia, were found about eighteen inches below the surface

of the ground, which during nine months of the year is perfectly dry and hard, the remaining three months it is under water. When dug out of ground and put into water, the fish immediately unfold themselves and commence swimming about." Probably the other species becomes torpid also.

Migration is another curiosity of organic life. Our island is favourably situated for observing this phenomenon, serving as it does as a winter home to birds from the arctic regions, and a summer home to our visitors from warmer climes. So powerful is the instinct for migration, that aviary birds strive to escape when their time for departure arrives, although they are well fed and protected from cold. Some birds which are migratory in more northern latitudes than ours, may be considered as stationary here, and others which migrate from us are permanent dwellers in more southern climes. The redbreast wings its way to the south in autumn from northern Germany, Denmark, Sweden, and Norway, whilst it is stationary in our island, in France, and in southern Europe generally. The nightingale annually visits northern Germany, and even Sweden; and yet, strange to say, is seldom seen in Yorkshire, Wales, or Devonshire, and never apparently in Ireland. Dotterels leave Scotland at the end of August, but linger about our southern shores even to the beginning of November.

Migratory birds rest on their journey, and many travel during the night. M. Prelong says: "I have observed, as Adanson also has, that our swallows and our wagtails arrive in the torrid zone eight or ten days after the period of their departure from our climates."

But birds are not the only animals that migrate. Some arctic seals are migratory. Two species quit the Greenland coast twice in the year; once in March to return in June, and the second time in July to return in September. Probably all seals perform migration in a greater or less degree.

The migratory tours of fish are perhaps much less extensive than has been supposed. The mackerel has been thought to make long voyages of migration at different seasons of the year; but Yarrel attacks this erroneous idea. The salmon migrates from sea to river water; but it never travels far from the mouth of its native stream in its ocean wanderings. The time at which the salmon quits the ocean, and ascends any particular river, is materially influenced by the temperature of its waters. Some rivers teem with salmon a considerable time before others. In autumn, or in the beginning of the winter, the fish take their station in the estuary of their adopted river, and advance and retreat with the tide. After some time they pass upwards beyond the reach of its ebb and flow. Darting onwards, with arrowy speed, they bound over cascades and other obstructions, frequently leaping an elevation of eight or ten feet, and repeating their spring if baffled the first time. After depositing their spawn in September, October, and November, they retrace their course to the sea. The young fry follow their parents in March, April, and May.

The fancied migration of the herring has been described with minute, but totally erroneous, details. The journey of the great army of herrings from the Arctic Seas; its division into two parts, one visiting our eastern and the other our western coasts, and the subdivision of the western wing at the north of Ireland, have been all marked out. But this is fiction. The only migration of the herring is from deep to shoal water, and the reverse. The herring never visits the Arctic Seas.

In summer, the lapwing frequents heaths, morasses, and other similar places; but in autumn it assembles in flocks, which direct their flight to the lowlands and marshes near the mouths of our chief rivers: here we have migration on a small scale. The kingfisher also migrates from our inland rivers to the sea-coast in winter. The lemming, a sort of rat, quits its over-populated haunts in northern Europe, in great bands, once or twice in fifteen or twenty years. Some travel westwards, and host after host rushes into the western ocean and perishes; others are drowned in the gulf of Bothnia. They are said to march in lines about three feet asunder, and nothing stays their course. We are told that they gnaw through corn and haystacks, and their track is a scene of desolation.

The reindeer herds in companies in the north of Europe and Asia, which migrate from the woods to the mountains and back again. Even the domesticated animal performs similar tours. Dr. Richardson describes two varieties of North American reindeer which migrate in different directions. The woodland caribou, or reindeer, travels to the southward in the spring; the barren-ground caribou spends the summer on the coasts of the Arctic Sea, and in winter retires to the woods.

The migratory movements of the North American bison do not appear to be regular. The swarming of bees, ants, and locusts are well-known instances of irregular migration.

The sand-crab of the coasts of America and the Antilles lives in a burrow, above the water-mark, during the summer. Here it remains in the daytime, but sallies forth in the evening in search of food. Companies of these crabs march inland towards the end of October, and hybernate in a deeply-excavated hole.

Land-crabs—which are found in the Old and New World and in Australasia—"pass the greatest part of their life on land, hiding in burrows, whence they issue forth in the evening. Some take up their abode in graveyards. Once a year, when they would lay their eggs, they assemble in numerous troops, and take the shortest course to the sea, without being deterred by any obstacles which they may meet with on the road. After the deposition of the eggs, they return in a state of great debility."

Again, animals are either congregating, gregarious, social, or solitary. Congregating animals associate involuntary, as locusts, oysters, mussels. Gregarious animals associate voluntarily; but each individual provides for itself only, as the wild sheep, the antelope, the rook. Social animals congregate together, and jointly labour for their mutual benefit, as the honey-bee, the ant, the South African weaver bird, the beaver. Solitary animals are those which go in pairs, as the lion, the tiger.

Here we bring our brief account to a close. The subject might easily be extended to volumes; for the organic world abounds with curious and striking proofs of His goodness, wisdom, and power, of whom it is written, "of Him, and through Him, and to Him are all things: to whom be glory for ever. Amen."

The hedge-sparrow fed the cuckoo so long
That it had its head bit off by its young.

WILD FLOWERS.

VIPER'S BUGLOSS. (*Echium Vulgare.*)

AMONG the flowers which beautify our waste places, this plant is not only one of the most striking from its height, but one of the most beautiful in shape and hue. We never find it on the rich grassy meadow-land, or among the lovely wild flowers which border our streams, or rise beneath the shadow of the trees. But on the heap of chalk, or sand, or gravel, accumulated by the wayside; on the sandy soil of the neglected field; on the beach, where, among the stones, a little earth can find room to gather; on the old wall, or the majestic cliff, there it raises its rich spire of blossoms. Its proper season of flowering is in June and July; but the author has often gathered it even in December, not rising to its usual height, but with the rich purple of its blossoms, and the bright-red tint of their long stamens, as beautiful as ever. The plant is usually about two feet high; but in places where it flourishes best, as in the sandy fields of Cambridgeshire and on the chalky cliffs of Dover, it is sometimes more than three feet in height, and the blossoms extend half-way down the stem. The colour of the fully-expanded flowers is of a deep blue, but the young buds are of a full rose colour, and occasionally the blossoms are found, as at Cobham, in Kent, of a pure white. The whole plant is very rough to

the touch. Its scientific and English names are significant of the long-cherished notion, that it was an effectual remedy for the bite of the viper,—a notion derived from its spotted stem, and its seed, which somewhat resembles the head of that animal, and was thus deemed to have some mysterious connexion with it.

Though our Viper's Bugloss is an herbaceous plant, many of the species are much larger, and several found at the Cape of Good Hope are shrubs. The various kinds grow abundantly throughout Europe, from the cold Siberia, where they enliven the dreary lands, to the warm latitudes of the south, where flowers are bright and numerous. They are, however, less frequent in the equinoctial parts of the world. Some very handsome species are commonly cultivated in our gardens.

THE RESCUE.—No. II.

Mrs. Jenkins shook her head, and Mrs. Stretton continued.

"But, as I was saying, we finished the chapter, and then, having said our prayers, we went to bed. My husband, who was very tired, was soon fast asleep; but, somehow or other, I could not close my eyes. I lay listening, for what I could not tell, and sometimes started as Stretton gave a heavier snore than usual. I heard the clock strike eleven—twelve; I then sank into a doze, betwixt sleeping and waking; I heard a bell strike—this roused me—I listened—sat up, and, as all was still, I fancied the clock had struck one. Suddenly stroke after stroke followed, quick and loud; I sprang out of bed, ran to the window which looked towards the Hall, and saw—I shudder now to think of it—volumes of smoke and flame covering it.

"It was the alarm bell that I had heard. I flew back to the bed, shook Stretton with all my strength, for he was so sound asleep that it was some minutes before I could wake him thoroughly, and make him comprehend what was the matter. We instantly threw on our clothes, and with all speed hastened to the Hall. I shall never forget it. At the east wing flames were issuing from every front window; people were already running to and fro, screaming for aid, which nobody gave. All was confusion, for there was no one of sufficient authority to order the movements of those who were willing to assist, or to command the services of those less inclined to be useful, so that many did as much mischief, through zeal ill-directed, as others in not attempting to do anything.

"'The children! the children!' screamed I; 'where are they? are they safe?'

"No one could answer me. I knew the nursery was in that wing, and it appeared to me that the fire was most violent in the very direction in which it was situated. The wind was now blowing fresh, and the whole building, they said, would be lost. I thought nothing of this; I cared for nothing but the children. I shrieked for my husband—ran here and there looking for him. 'Thomas! Thomas!' cried I, as soon as I saw him, 'the children! the children! the dear babes—'

"'What of them?' said he, turning as pale as a sheet; 'they are safe, ain't they?'

"'I don't know! I don't know!' screamed I; 'nobody knows anything about them.'

"'Look! look!' cried many voices at once.

"I did look; and oh! what a sight met my eyes! At the top staircase window was that dear little William, in his nightgown, the picture of terror, his arms stretched out, leaning out as forward as he could, the flames pouring out of the windows above and around him, and licking the very wall under him. I clapped my hands before my eyes; I heard his cries; I looked again; I saw his agony, and I was almost frantic. 'Throw yourself out, throw yourself out!' roared many. 'He will be killed that way,' cried I; 'Stretton! Stretton!' and I called as loud as I could, but he was gone. 'Save him! save him!' cried I to the men near me.

"'How are we to save him?' returned many, gruffly; and they stood still, gazing on.

"I tried to force my way nearer, but for what purpose I could not say, when, all of a sudden, I saw my husband, a ladder in hand, rushing towards the wall.

"'Are you mad?' cried one.

"'You'll lose your life,' cried another; and some tried to hold him back.

"He paid no attention to any of them, but continued to force his way through them, and was now close to the wall.

"'Stop your husband!' cried many; 'he's lost if he attempts to go up.'

"I could not stop him; my fears for the poor child pleaded too strongly for that. My husband, I knew, was as brave as a lion, and powerful as he was active. I bade God prosper him, but I shut my eyes as the shouts and cries of the crowd increased. Once only did I dare to open them; the little fellow's arms were now stretched to the very utmost, and he was leaning so far out of the window that the slightest thing would have made him lose his balance, and thrown him headlong to the ground. Stretton seemed in a burning mass; the flames wrapped the staves of the ladder on which he was standing. He, too, was at arm's length, trying to catch hold of the child—he was above his reach. 'Don't be afraid,' cried he, 'stretch a little more—now throw yourself to me.'

"In a moment a darkness came over me; I neither saw nor heard; when a loud cry arose: 'He has caught him! they are safe! they are safe!' I had sunk on the shoulder of a neighbour, for we stood too thick for me to fall to the ground. Recollection returned in an instant, my husband called me loudly. The crowd gave way as I pressed forward.

"'Take the child,' said he, throwing him into my arms, 'run home with him, put him to bed, for he is drenched with water, and quakes with terror.'

"'And you,' cried I, as I huddled the child over with my gown, 'are you hurt?'

"'Never mind me,' said he, 'make way for her,' and he pushed back many who were pressing upon us.

"'But you must mind him,' said one of our neighbours, 'his arm is shockingly scorched, and his leg, too, I expect.'

"'Come home,' I cried, "come home,' and I tried to hold him.

"'Not till I know the baby is safe,' returned he.

"'She *is* safe,' said one of the servants, who had just joined us; 'she was removed at the first alarm; she and her nurse are at the further end of the Hall. How Master William was forgotten, or how he got to the window, I can't imagine.'

"'And it would do no good if you could,' said Stretton; 'one thought beforehand is worth a thousand afterwards. Among so many of you one would have believed that your master's son would not have been forgotten; but go home, Nancy, go as fast as you can, and I shall take no harm; there's plenty yet to do. When it's all over you may look for me, but not till then;' and as he spoke he hallooed to the men, and was out of sight in a minute.

"I waited for no more, but ran home as fast as I was able—for the dear child was heavy, and I trembled more for joy, I suppose, than I had done from fear. I wrapped him in flannel, put him into our warm bed, made a fire in the kitchen, and set on some water, that I might give him a little tea, and then laid down by him. The poor little fellow was so terrified, and shook so fearfully, that it was a good while before I could in any way calm him. At length he fell into an uneasy sleep, in which he sometimes started almost convulsively, and at others talked, in broken sentences, of the flames. I longed to go to my husband, yet I could not leave the child. I shall never forget what I suffered; I fancied all sorts of terrible things; and if I had not been afraid that Thomas would have been angry with me, I do not think I could have remained in the house.

"The longest hour has an end: as daylight was beginning to dawn Stretton returned. The fire had been extinguished; and though a good deal of damage had been sustained, no lives were lost, and the greater part of the furniture was preserved. My husband was in great pain; not only were his hand and arm very much scorched, but one of his ankles severely burned, so that he was lame for many days after. He was standing by the bedside when the dear child began to move. Poor little thing, he started, and then opened his eyes wildly. He was at first quite bewildered, and trembled all over. He looked earnestly at my husband, and then, as if all he owed him came clear to his mind, he threw his arms round his neck and began to cry. We cried with him; yes, my Thomas cried like a child, though he has often said since that was the happiest moment of all the years that had gone before or have passed since. From that time the dear boy has been as fond of us as we are of him. I could tell you a thousand pretty tales of his affection; I treasure them all in my heart and mind, only bringing them out of their storehouse as a treat, when Stretton and I are alone."

"I should think it answered your purpose well—it was a lucky fire for you," said Mrs. Jenkins, when she found that the narrative was at an end; "Sir Richard must have rewarded you both very handsomely, no doubt."

Mrs. Stretton coloured deeply.

"It answered all the purpose we expected or wished for. Sir Richard thanked my husband as a father only could have found words to thank him."

"Was that all?" exclaimed Mrs. Jenkins, contemptuously. "He could not have done less, however. What, not gave you anything?"

"Yes," replied Mrs. Stretton, warmly, "he did, and something, too, on which we can set no price. He gave my husband, as a mark, he said, of his esteem, a beautiful silver tankard with an inscription upon it, which Stretton values more than the tankard itself, handsome as it is. He understood him too well, and was too noble-hearted to offer a reward to a man who desired no favour from any one, and whose labour made him independent; no, Sir Richard treats him in a way which is as honourable to the one as to the other. Neither forgets his place, but each is respected and valued as he deserves. If Master William loves us, Sir Richard

and his lady look upon us and treat us in a different way from what they do any other persons of our sort. Little miss, too, often comes to see me, and I am proud to say we are never forgotten where we can be remembered with propriety by them or with comfort to us."

"Well, give me the solid," said Mrs. Jenkins; "I have no notion of sparing them who can afford to pay a good round sum of money."

"It would have been an affront, would have been felt almost as an insult by my husband," returned Mrs. Stretton; "as he would never have sold his life for money, so neither would he have been pleased that another should think to purchase it with money, and so show that he considered the hazard of that life recompensed by the gifts of a few pounds."

"As you like," replied Mrs. Jenkins, "all to their notions for me; but you will at least allow that it was a lucky thing for the child that such a man as your husband was at hand."

"It was something more than lucky," said she earnestly; "such escapes from death or danger are the work of God."

"So they may," returned the other; "but where would the child have been but for Stretton?"

"He was an instrument in the hand of God," replied she.

"What!" exclaimed Mrs. Jenkins, "do you mean to say that there was no merit in your husband? that any man might have done what he did, and that his courage and strength must go for nothing?"

"I say no such thing," said Mrs. Stretton; "there is wisdom in all that God does or orders. He chooses His instruments, and he chooses, of course, those who are proper for the task He gives them; these He protects and blesses with His aid. He does for them at such times what they of themselves could not do; but He leaves them to do all they are able to perform, and expects them to exert themselves, while they depend upon Him as earnestly as if they depended only on their own strength and skill for success."

"All very good," replied Mrs. Jenkins; "but you must not try to persuade me that they who hazard their lives for others are to look for no reward, and that they who have been benefited by such hazards are not bound to show proof of their gratitude."

"To be sure I don't," said she, "you mistake me; we are not to do good to others that good to ourselves may come from it; but a just and honest reward is what no right-minded person will either disdain or refuse. Recompense is sweet to every one, and to none more so than to him who knows he deserves it; to such, however, reward is a something to come after which he does not think of, and not that which first set him in motion, and in the midst of his daring, is uppermost in his mind. I agree, too, entirely with you that it is our bounden duty to recompense those who have done us good, and to give open proof of our gratitude."

"I dare say," returned Mrs. Jenkins, "that you see your own meaning; we generally do, but I can't say that I see it. Sir Richard, to my mind, ought to have made you a present of untold gold."

"Sir Richard has given us what we value more than gold," answered Mrs. Stretton, "he never neglects to serve us whenever he has the opportunity; but it is never directly, as one may say, to make us feel it as a return to us; his kindness comes as a matter of course, whilst his and his lady's behaviour to us sets us upon no level with them, but makes us happy in the respect we feel for ourselves. If Sir Richard had offered us money, as you say, it would have been just as if he had said, 'I don't

choose to be under an obligation to you, take this, and let me forget what you have done for me;' you may smile, but take my word for it I am right. It is a proof of a proud heart, rather than of a grateful one, when, impatient under an act of kindness, we try to get rid of the sense of it by a reward greater than the act merits, or which the situation of those who showed it makes unnecessary or out of place."

Mrs. Jenkins had made up her mind, however, like many other persons, not to be convinced by anything that Mrs. Stretton said; and the latter was not sorry to change the subject, or to see her opponent depart.

Frederick, in the meantime, had expressed to William his unfeigned surprise at what he had heard and seen in Stretton's house—a surprise which had exceeded that even of Mrs. Jenkins. William simply accounted for his conduct by relating the circumstances just recorded, and declaring his affection for the worthy pair, to whom he owed so much.

"That is all very right and very natural," said Frederick, when William had ceased; "I can quite understand how deeply you must feel indebted to them, and how wrong it would be to neglect or slight them; but I must confess I do not see why you should be on such very familiar terms with them."

"In plain terms," replied William, "your pride is a little shocked, but there is no need that it should be. It is a cold gratitude, Frederick, that stays to measure words and looks because the parties are not of the same grade in society. Situated as Stretton and his wife are, the manner, if not the degree of affection that displeases you, is more acceptable to them than anything else I could offer, and I will never be ashamed to show what I feel when I know the feeling to be just. Some day or other, however, I hope an opportunity may be afforded me of giving some more substantial proof of my gratitude and regard than it has hitherto been in my power to show them—not to reward them, but really to gratify myself. I am sorry, though, to have annoyed you in—

"Pray say no more," exclaimed Frederick, quickly, not waiting for the completion of the sentence, "you are right and I am wrong; my pride was hurt, I own it, and I felt I could not behave as you did; but indeed I do not think that it is our dispositions that are so different, as the manner in which we have been brought up. Living in large cities contracts, I am sure, our feelings and ideas. We Londoners are proud—not from nature, I believe, but from circumstance. We do not come in contact with persons of an inferior rank sufficiently, if at all, to correct and enlarge our views: you who live in the country mix with every one; you form a much more correct notion of others than we do, and without losing the respect that you owe to yourselves you are more ready than we to give to others the respect due to them; you consider those neighbours whom we look upon as inferiors, and whilst many interests divide us, one feeling seems to bind you all together."

"But, Fred," said William, looking archly at him, "is this quite your own?"

"Not exactly," replied he, slightly colouring; "I saw the difference between your manner, and, perhaps, Sir Richard's too, when I was last here, and what ours would be to ordinary persons, and I named it to my father. But be fair. If I give you credit for finding I was speaking with more wisdom than belongs to me, give me credit for making that wisdom to bear at the moment I wanted it."

William laughed. "I own," said he, "I like the country a great deal the better of the two."

"And I the town," replied Frederick.

"It is my turn now," said William, "to mount the professor's chair. Do you recollect Dr. Milner's remarks on this very subject in his parting speech? 'The diversity of tastes, whether shown in the choice of our professional pursuits or inclinations,' said he, 'is a strong proof among many of our Creator's mercy, wisdom, and providence; an active source of private and public good; a silent but unmistakable evidence of a superintending Deity.' But hark! there is the gamekeeper's gun; let us see whether my father will let us go out with him."

They now walked briskly across the park, the conversation turned from grave to gay; and by the time they had reached the Hall little was remembered but the pleasure they anticipated from the permission they hoped to obtain.

A sharp frost had now fairly set in; William's skates were in constant requisition, and practice soon made him an expert and swift skater. Frederick was not naturally so active as his companion, but he was pleased with the novelty of the exercise; and, though he could not keep pace with William, or imitate his evolutions, he was always to be seen on the ice with him. They were one morning several miles up the river, which was there skirted for some distance by the main road, when their attention was attracted by the furious pace at which a man on horseback was riding. Scarcely, however, had he passed them, when, owing probably to the slippery state of the road, the horse fell violently to the ground, throwing his rider over his head. The accident was also perceived by some persons in a little public-house hard by, and by the time that William had disencumbered himself of his skates, and reached the spot, they had raised the man from the ground. He was evidently much hurt, but was not insensible.

"Don't mind me," said he, "my master's brother has met with an accident, and nearly torn his arm off with the thrashing-machine. He will bleed to death if he has not immediate assistance. Let some one mount my horse and go for the doctor with all speed."

He would have been promptly obeyed, but the horse was found to have lamed himself severely. Nor was this the only misfortune. The road was so slippery, that as the only animal in the stable was not, they said, turned up, it was impossible for any one to ride fast. The fact had no sooner reached the ear of William, than leaving the men to debate the point, he hastened back to the river, and putting on his skates with the utmost despatch he summoned all his strength, and, fleet almost as the wind, he reached in a very short time the surgery of the first medical man in the town. He told his errand, and requested the immediate aid of Mr. Hartopp, whom he happily found at home.

"I will follow your example," said that gentleman, "and skate down to the farm. Are you too tired to return with me?"

William declared he was not; and bearing part of such apparatus as Mr. Hartopp thought likely to be requisite, he kept pace with him, and both quickly reached the house where the wounded man lay. William was naturally a courageous boy, and possessed of much nerve, but these qualities had never been tested in the manner in which they were on this occasion. The arm of the sufferer was so much lacerated that Mr. Hartopp considered it expedient to resort immediately to amputation.

XUM

William was almost his only assistant; and his conduct drew from Mr. Hartopp, when the operation was over, the warmest encomiums.

"If the man recovers," said he, "and there is no present reason to fear his not doing well, you will be under Providence the means of saving his life. Had the frightful hæmorrhage which followed the accident been suffered to continue only a few minutes longer, nothing could have prevented death. It was lucky for him that both you and I are good skaters. I am glad for his sake that we were with him so expeditiously, and heartily glad for Stretton's sake; for it would have been a most serious thing to him just now if this poor fellow had lost his life."

"Why?" asked William; "what has he to do with Stretton? he is no relation of his, is he?"

"Are you not aware," replied he, "that it is on this very man's evidence that all Stretton's hopes depend of a favourable issue to his lawsuit? I really thought this was the cause of your earnestness and activity."

William's heart beat quickly, and a brighter colour than was already glowing on his cheek overspread his countenance.

"No," replied he, "I knew nothing about it; but how glad am I that I—" he checked himself, for he was as modest as he was grateful and amiable.

Mr. Hartopp smiled.

"I understand you," said he, "you are glad that you have been able to repay, you would say, a part of the obligation you owe that worthy man who saved your life. Ay, beautiful truly are the ways of Providence, and certain indeed it is that in almost every instance that which we sow we ultimately in one way or other reap. There is a chain in the hands of Providence, which, though unseen, and often operating unsuspected by those most nearly interested in the unfoldings of its coil, continues to link one event with another, making that which is apparently only a natural consequence from certain visible causes—a proof that all things are under the direction of an Almighty Being, of a Being who so cares for His creatures, and so favourably regards the good deed done by one human creature to the other, that He will not allow a recompense entirely to fail even in this life, and often appoints him who has received the benefit to be the instrument of that recompense to his benefactor."

William heard him in silence but with happiness; nor did he afterwards meet with any drawback to his gratification. Morris recovered under the skilful management of Mr. Hartopp; and the affectionate youth had the delight of being greeted on his return from Eton at Easter by Stretton with the welcome salutation—

"Well, Mr. William, we have gained the lawsuit, and to whom do we owe it? Why to you, for being so active as you were in saving the life of Morris, and to your good father, Sir Richard, in putting my cause into the hands of the best counsel on the circuit. My old wife here shed as many tears when I came home and told her all about it as would have cooled a bar of iron. I shed no tears, as you may believe, but I thanked God from the bottom of my heart, that in doing my duty to you in the prime of my manhood I had secured comfort and ease for myself in my old age."

SUBSTANCES USED AS FOOD.—No. II.

We have endeavoured to reduce the solid and liquid food of men to some sort of order; and it will be found that all articles of consumption for this purpose, among civilized people, resolve themselves into one or other of these classes. But there occur instances of whole tribes of savage people subsisting on—at least, using as food—substances which cannot be brought under any of these classes. The animal and vegetable kingdoms, until lately, were regarded as the exclusive sources of the food of man: it was not considered that any mineral substance whatever was of use in this respect. There can be no question that this is an error, and that some of the mineral substances which enter into the composition of our ordinary provisions, such as salt (chloride of sodium), the earthy phosphates, &c., are as strictly necessary to us as food, as is the gelatine of muscles or bones: in fact, if it be considered from what we are to derive those mineral substances, which are so abundantly found in bones, teeth, and even in the blood itself, it will be evident that they must come from our food: such substances are consequently a part of the proper food of man. They differ from the food obtained from the animal and vegetable worlds in the fact that they are generally combined, and are not used by themselves as food. Thus, for the growth and nourishment of the bony skeleton, we do not eat the phosphates and carbonates of lime and magnesia, which form their solid parts, but we obtain these substances out of our ordinary food, with which they are generally mixed.

It is, however, a very singular fact, that there are tribes of Indians who actually eat earth as food; and we shall here proceed to give the substance of Humboldt's observations on this subject,* which will be found to contain some very singular facts on this subject. "It is currently reported," he observes, "throughout the coasts of Cumana, New Barcelona, and Caracas, that there are men, living on the banks of the Orinoco, who eat earth." On the 6th of June 1800, on Humboldt's return from the Rio Negro, when he descended the Orinoco in thirty-six days, he spent the day at a station inhabited by the Otomacs. Their little village, which is called La Concepcion de Urnana, is very picturesquely built against a granite rock. It is situated in 7° 8′ 3″ north latitude, and in 67° 18′ west longitude. The earth which the Otomacs eat is described as an unctuous, almost tasteless clay, true potters' earth, of a yellowish-grey colour. The latter appears to be due to the presence of a small portion of oxide of iron.

The preparation of this unnatural kind of food is made with some care. The earth is carefully picked, being found on the shores of the great rivers Orinoco and Meta. When found, it is kneaded into balls, which are from four to six inches in diameter. These are then baked before a slow fire, until their crust or outer surface becomes of a reddish colour. It is said that the earth has different kinds of flavour, and is selected by the palate almost as carefully as our more dainty provisions. Before the balls are eaten, they are moistened with water.

The Otomacs do not, however, constantly live on this kind of food. The circumstances which appear to lead them to its adoption are the

* Humboldt.—'Views of Nature,' p. 142.

following. When the waters of the rivers Orinoco and Meta are low, they then live on fish and turtles. They are said to kill the former with arrows, shooting the fish as they rise to the surface of the water, with great skill and dexterity: but when the periodical swelling of the river takes place, fishing is then stopped, for it is as difficult to fish in deep river-water as in the deep sea. It is during these intervals, which last from two to three months, that the Otomacs are observed to devour an enormous quantity of earth. In their huts are considerable stores of these clay-balls, piled up in pyramidal heaps.

Humboldt was informed by an intelligent missionary, who resided amongst them, that an Indian would consume from three-quarters of a pound to a pound and a quarter of this food daily. It appears, in fact, to constitute their chief support during the rainy season; but, whenever they can procure them, they also devour small fish, lizards, and the roots of a fern. This does not, however, arise from any dislike to the clay, for even during the dry season, when an abundance of fish can be obtained, they are said still to partake of a portion of their earth-balls,—by way of a dessert, after their regular meals.

The observations which Humboldt makes on this remarkable selection of human food, are very deserving of consideration. The simple facts are, therefore, as follows:—"The Indians undoubtedly consume large quantities of clay without injuring their health; they regard this earth as a nutritious article of food, that is to say, they feel that it will satisfy their hunger for a long time. This property they ascribe exclusively to the clay, and not to the other articles of food which they contrive to procure from time to time in addition to it. If an Otomac be asked what are his winter provisions—the term winter, in the torrid parts of South America, implying the rainy season,—he will point to the heaps of clay in his hut. These simple facts do not, however, by any means, decide the questions—whether clay can actually be a nutritious substance? whether earth can be assimilated in the human body? whether they only serve as ballast, or merely distend the walls of the stomach, and thus satisfy the cravings of hunger? These are questions which I cannot venture to decide."

Various theories have been offered to account for this phenomenon, of a whole tribe of men subsisting, apparently, almost entirely upon earth as their food. Some have indeed affirmed that the Otomacs mix up flour and fatty matters with their earth; but this statement has been met with a positive denial of the fact by those who have been conversant with their habits. Some of the earth has been chemically investigated by M. Vauquelin, and it is stated by him to have no such ingredients in its composition. It has been ingeniously conjectured, by others, that this earth contains the *débris* of animalcules, the constituents of which may account for its use as an article of food. It appears, in fact, very difficult to believe that the earth can be simply a mineral substance or pure clay, for it is irrational to suppose for a moment that life could be sustained by the consumption of a substance, the chemical analysis of which shows that it is incapable of affording any material for the use of the living body,—and this is the true function of all food, properly so called. It would, therefore, seem not improbable, that mixed, or in some manner united, with this earth, there must exist some of those alimentary principles spoken of in a previous page, which serve to build up the body, or to sustain the animal heat. It will, however, ap-

XUM

from what has yet to be adduced, that careful analysis, in other cases, has not given to this last supposition the support we might have anticipated.

The Otomacs are by no means singular in their propensities for devouring earth. Inquiry has shown that the practice prevails among many other tribes, more or less extensively, and in a very remarkable manner in the tropics. It is said to be often necessary even to shut up children, in order to prevent their running into the open air to devour earth after recent rain. It has been stated by Humboldt, and also by Gilj, that the women who are engaged on the river Magdalena, in the small village of Banco, in burning earthenware pots, continually fill their mouths with large lumps of clay. At San Roija, an Indian child was observed, which, according to the statement of its mother, would hardly eat anything but earth.

It is a remarkable fact, that the Negroes of Guinea are also in the habit of eating a yellowish kind of earth, called *caouac*. Even when carried as slaves to the West Indies, this habit continues, and they there endeavour to procure some similar species of food, maintaining that the eating of earth is perfectly harmless in their African homes. It is found, however, that the caouac of the American Islands has a deleterious influence on the health of those who partake of it. Its use was consequently forbidden in the West Indies; yet, it is stated, that notwithstanding this prohibition, a species of reddish-yellow earth was sold secretly in the market of Martinique in the year 1751. A traveller of that period affirms, that the flavour of the earth eaten by these Negroes in their native land is most agreeable to them, and that no punishment can prevent them from devouring it.

In Java, the same practice prevails. Humboldt quotes a statement of Labillardière, who affirms that small square reddish cakes are publicly sold in their villages. The natives call these cakes *tarra ampo* (*tarrah* signifies earth, in Malay and Javanese). On examining these cakes more closely, Labillardière found them to consist of a reddish clay, and they were intended for eating. In 1847, some edible clay was sent from Samarang to Berlin, for the purpose of analysis. It was in the form of rolled tubes, like cinnamon, and was examined by Ehrenberg, the great microscopical observer. It was found to be a fresh-water formation, deposited in tertiary limestone, and composed mostly of microscopical animalcules. It has been stated by Labillardière that the natives of New Caledonia, to appease their hunger, eat lumps of a friable kind of soap-stone, in which Vauquelin detected a certain quantity of copper. In Popayan, and many parts of Peru, a kind of calcareous earth is sold in the streets, as an article of food for the Indians, together with the cocoa.

The facts thus collected, and here given, on the high authority of Humboldt, are certainly very curious, but appear, at present, not to admit of a rational explanation. The concluding remarks of this eminent traveller are as follows:—"We thus find that the practice of eating earth is common throughout the whole of the torrid zone, among the indolent races who inhabit the most beautiful and fruitful regions of the earth. But accounts have also come from the north, through Berzelius and Retzius, from which we learn, that, in the most remote parts of Sweden, hundreds of cartloads of earth, containing infusoria, are annually consumed by the country people as bread-meal, more from fancy (like the smoking of tobacco) than from necessity. In some parts of

Finland, a similar kind of earth is mixed with the bread. It consists of empty shells of animalcules, so small and soft that they break between the teeth without any perceptible noise, filling the stomach, without yielding any actual nourishment. Chronicles and archives often make mention, during times of war, of the employment as food of infusorial earth, which is spoken of under the indefinite and general term of "mountain-meal." Such, for instance, was the case in the Thirty Years' War, in Pomerania, at Muskau in the Lausitz, and Kleiken in the Dessau territory; and, subsequently, in 1718 and 1733, at the fortress of Wittenberg."

It must be acknowledged, that a true solution to the facts thus given by Humboldt is yet to be desired. But it may be reasonably conjectured that whatever amount of material for the building-up of the muscles and formation of blood could be obtained from such aliment as that here alluded to, must have been derived from the presence of some organic matters in union with the mineral substance devoured.* It must not be forgotten, too, that some of the mineral substances eaten are actually demanded by the body for its nutrition and support, and, to a trifling extent, indeed, the substances adverted to form a direct food. Doubtless their principal value lies in their serving to distend the walls of the stomach, and thus to allay the distress occasioned by hunger, for the gastric juice is poured out upon any material of sufficient bulk which the stomach may contain, and the production of that secretion would seem to appease, for a time, the agonizing cravings of hunger.

Among the lower animals, instances of feeding upon earth are not infrequent. The earthworm and some others are known to swallow earth: the *Spatangus* and *Arenicola*, animals low in the scale of organized creation, fill their stomachs with sand. In all such cases, the true food is probably not the mineral substance devoured, but some organic matter intermixed therewith.

CURIOSITIES OF GEOLOGY.

Myriads of ages ago this globe, now teeming with life and beauty, was probably a burning and fluid mass. As this intensely-heated body grew gradually cooler, a rugged crust, it may be, formed upon its surface. At first, we may imagine, no living thing existed in this fiery world, because, so far as we know, neither animal nor vegetable life can be maintained in boiling water. As the cooling of this heated mass went on, granite was gradually formed; and by its disintegration, strata of gneiss and other rocks were deposited, so that at the end of our first period the earth would present alternations of land and water, but would be without a lichen or a moss to cover its bare and rocky surface. Let it be distinctly remembered, however, that this is hypothesis—a theory to explain geological phenomena.

But at length He in whose care this desolate globe had been from its

* Recent investigation has demonstrated the correctness of the opinion expressed in the text. Some of the earth-food of Lapland has been analysed with care, and found to contain a large portion of organic matter from the *exuviæ* of infusorial animals. By incineration such earth loses 20 per cent. in weight.

creation, gladdened it by the presence of living beings, and amongst the earliest of these seem to have been the Graptolites. These fossils were once apparently the horny skeletons of animals—compound creatures, consisting of a vast number of polyps attached to a central body, but each possessing a stomach and arms of its own, and an independent existence which could be destroyed without killing the entire animal.

Polyps, then, appear to have been the first-created beings on our globe; and it is astonishing how much has been added by minute creatures of this species to the solid matter of the earth. They have piled up a barrier reef, four hundred miles in length, on the shores of New Caledonia; and on the north-eastern coast of Australia they have erected a monument of what may be done by persevering, though puny efforts, which is one thousand miles long. These reefs average, perhaps, a quarter of a mile in breadth and one hundred and fifty feet in depth, and have been built, be it remembered, amidst the stormy waves of the deep.

Another of the earliest groups of animals is the Crinoids, lily-shaped creatures, as their name indicates. Many of them resemble a cup-shaped flower on the top of a stem: in some species there is wonderful complexity of structure.

One form was that of a small orange attached to a slender stem. The animal had no arms; and this globular head was covered with stony plates, whose number was sometimes indefinite. There was an orifice on the upper surface of the stony case which served as a mouth; an adjacent one was for the expulsion of undigested food; and a third, near to these, for the laying of eggs. The mouth was furnished with a proboscis, covered also with plates, and the egg orifice was provided with a little pyramid made up of valves. What a curious sight would be the bed of a sea covered with these tulip animals, waving in the currents, and spreading about their arms in quest of prey! The wheel-like bones of the stalks of crinoids are strung as beads in some places.

Trilobites are another primary race of animals. Their heads were defended with a large semicircular, or crescent-shaped shield, and their bodies and tails with plates, which moved readily upon one another. On their heads were a pair of large conical protuberances, nearly covered with eyes, so that they could see in all directions without moving. Hence it is inferred that at this early period the general conditions of light and of the atmosphere were not materially different from what they now are.

But the graptolites, the corals, the encrinites, and the trilobites, were not the only inhabitants of the primæval waters. Contemporary with them were two, if not three, singular tribes of the great family of the mollusca. Could we have seen the seas of this long-bygone era, these animals would have been flitting before our eyes with sudden jerks, or swimming freely and gracefully along with their long and slender or short and pear-shaped shells. But their forms were various.

We now come to a period when fishes made their appearance in our waters. Three genera require especial attention. The Cephalaspis has been compared to the crescent-shaped blade of a saddlemaker's knife, the body being the handle. A plate of firmly-soldered and enamelled bone appears to have protected its head, and the whole body was covered with scales. Its length was perhaps never more than about seven inches.

The Pterichthys may be compared in size and appearance to a small doll without a head, and with one of its legs cut off, whilst the other is placed under the centre of the body to represent the tail of the animal.

It was not more than a few inches or a foot in length, and was defended by plates of enamelled bone on its head and body.

The Coccosteus, another plated fish, had berry-like tubercles upon its bony scales. In the latter part of this period we meet with the Holoptychius, with a covering of large, rounded, and deeply-wrinkled scales. The body of one specimen measures thirty inches by more than twelve, without the tail. A row of pointed and closely-set teeth armed the lips, and another row of teeth, twenty times the size of these, was situated within the outer one.

We now come to the time when vegetation made its appearance on the land; for though the subject is involved in much obscurity, it appears probable that a marine flora had already appeared. In truth, it may be that both land and aquatic plants existed, but now vegetation became luxuriant. Amongst these plants are calamites, resembling the common jointed reed called mare's-tail, but with a stem that was sometimes more than a foot in diameter, which bore branches and leaves of corresponding size—tree ferns of great height; lepidodendra, with scarred and lofty stems and delicate feathery fronds; sigillaria, whose bare and fluted trunk bore a noble head of palm-like foliage; stigmaria, which were, perhaps, the roots of the last-named trees, and which are so abundant that in South Wales the coalfields seem almost always to rest upon them as a foundation; and trees, overtopping the rest of the forest by more than a hundred feet, with tier upon tier of gradually-shortened branches, and pointed and pear-like leaves. A lepidodendron, found in the Jarrow coalfield, was thirteen and a half feet wide at the base, and thirty-nine feet high, exclusive of the branches which were entire; and an araucaria, in Craigleith quarry, was three feet in diameter and twenty feet long.

The Megalicthys, one of the fishes characteristic of this period, had teeth, some of which have been found measuring four inches in length and nearly two inches in breadth at the base; whilst its body was covered with scales, sometimes five inches in diameter.

In the next period we meet with the lily encrinite, which belonged to the group of crinoids already described. This animal had nearly thirty thousand separate pieces of bone in its skeleton. Large five-toed footmarks are met with imprinted on stone, which are assigned to the Cheirotherium, a huge frog, as large as a rhinoceros, with short fore extremities. But the existence of such an animal is doubtful.

The Pentacrinite—another crinoid—has been computed to have contained not less than one hundred and fifty thousand separate bones in its skeleton.

We now meet with Ammonites, resembling the nautilus; and Belemnites, cuttle-fishes, whose fossils are metamorphosed by ignorance into petrified snakes, thunderbolts, devil's toenails, and other things. The Icthyosaurus, a huge fish, sometimes from thirty to forty feet long, with a smooth skin, a jaw six feet long, and an enormous eye, whose socket was nearly five feet in circumference. With this eye, and a breathing hole above the surface, this formidable animal might have been seen floating by, in primæval seas, the Plesiosaurus, a black slimy-skinned creature, sixteen or twenty feet in length, or perhaps twice this length in some instances, with a long serpent-like neck, and four large and powerful paddles, almost like hands, which, probably, enabled it to waddle along on land.

In the next period we meet with the Cetiosaurus, which rivals the largest whales in size; Ammonites and Belemnites of gigantic dimensions;

XUM

the Megalosaurus, a huge crocodile, probably thirty feet in length, mounted on long and massive legs; the Pterodactyl, a flying reptile, with a long snout and neck and large eyes, and sometimes as large as a cormorant. This curious creature could walk, swim, or fly apparently, and had a bare or scaly body. The Iguanodon, probably about thirty feet long and twelve or fifteen feet high, or more than from one to four feet higher than the tallest elephant, with a huge body of perhaps twelve feet in length.

In the next period occur the Mosasaurus, a gigantic lizard, whose solid and firmly-fixed jaw-teeth were renewed by young ones, which pressed against and gradually wasted away the old teeth, and in due time replaced them; and the Polyptychodon, whose solid thighbone measures nearly four feet in length.

We now come to fishes with a mast-like fin rising behind their heads, to a height much greater than the length of their bodies, and a sail extending from this mast to the tail, whilst they had two slender fins nearly as long as this on their bellies; another fish, the height of whose body and fins together was thrice the entire length of the grotesque creature.

In the following period we meet with the Dinotherium, whose length was nearly twenty feet, and its body huge and barrel-shaped, but near the ground, although the vast pillars which formed its legs are thought to have been nearly ten feet. Its lower jaw was furnished with two long tusks curved downwards, with which it perhaps dug or raked up vegetable food by day, and anchored itself by night to the banks of the lake in which it probably dwelt. In the year 1799, a Tangusian fisherman discovered a very perfect specimen of an extinct animal, but at first he did not know what it was. In 1806 the spot was visited by an officer of the Russian Court, who describes the remains as those of a huge mammoth, nine feet four inches in height and sixteen feet four inches in length, with curved tusks nine feet six inches long. The skin was so heavy that it required ten persons to carry it; one of the ears, well preserved, was furnished with a tuft of hairs. These animals had a long-maned neck, and the skin, of which only three-fourths appears to have been rescued, was of a dark grey colour, covered with reddish wool and black hairs. After clearing the ground, upwards of thirty-six pounds of hair were collected, which had been trodden in by wild beasts while devouring the flesh.

Specimens of an extinct elk are said to have horns with an expanse of sixteen feet. The Dinormis, a bird much larger than an ostrich, is a New Zealand fossil; and South America sends us the Megatherium, a huge sloth, nineteen feet long and nearly six feet wide across the loins. Its height was not more than nine feet. Resting on its hind legs and on its powerful tail, this animal is believed to have grasped trees with its fore-legs, and to have wrested them down that it might browse upon their foliage. Associated with this immense sloth was the Glyptodon, a colossal armadillo, resembling a tortoise and nearly as large as a horse.

Here we pause, for we are approaching what are geologically speaking modern eras. And let it be remembered that fossils which we have assigned to different periods may, nevertheless, be found in earlier or later epochs. But they have been mentioned under that era in which they appear to have been specially developed, or to which they give a distinguishing character.

Geology has been dragged by crude theorists into opposition with Christianity, but the cobwebs which they have spun are brushed away by

the hand of true philosophy. We know full well that none of the works of God belie His word; and all that the Christian need to do is to wait till the beams of truth dissipate the fogs which a false and hasty philosophy may at any time spread around him.

THE SEASONS.

I.

So forth issued the seasons of the year.
First, lusty Spring, all dight in leaves of flowers,
That freshly budded, and new blooms did bear,
In which a thousand birds had built their bowers,
That sweetly sing to call forth paramours;
And in his hand a javelin he did bear;
And on his head (as fit for warlike stoures)
A gilt engraven morion he did wear,
That as some did him love, so others did him fear.

II.

Then came the jolly Summer, being dight
In a thin silken cassock, coloured green,
That was unlined all, to be more light;
And on his head a garland well beseen
He wore, from which, as he had chafed been,
The sweat did drop; and in his hand he bore
A bow and shafts, as he in forest green
Had hunted late the leopard or the boar,
And now would bathe his limbs, with labour heated sore.

III.

Then came the Autumn, all in yellow clad,
As though he joyed in his plenteous store,
Laden with fruits that made him laugh, full glad
That he had banish'd hunger, which to-fore
Had by the belly oft him pinched sore;
Upon his head a wreath, that was enroll'd
With ears of corn of every sort, he bore;
And in his hand a sickle he did hold.
To reap the ripen'd fruits the which the earth had yold.

IV.

Lastly, came Winter, clothed all in frieze,
Chattering his teeth for cold that did him chill;
Whilst on his hoary beard his breath did freeze;
And the dull drops, that from his purpled bill,
As from a limbeck, did adown distill:
In his right hand a tipped staff he held,
With which his feeble steps he stayed still:
For he was faint with cold, and weak with eld,
That scarce his loosed limbs he able was to wield.

SPENSER.